



**Andrew J. Spano**  
County Executive

March 30, 2005

Pao-Tsin Kuo, Program Director  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Program  
Office of Nuclear Reactor Regulation  
U.S Nuclear Regulatory Commission  
Mail Stop O-11F1  
Washington, D.C. 20555-0001

Subject: Comments of the County of Westchester Regarding License Renewal Guidance

Dear Mr. Kuo:

As County Executive of Westchester County, I am pleased to submit herewith Westchester's comments regarding the Nuclear Regulatory Commission (NRC) proposal for changing the factors to be considered in deciding whether to renew licenses for nuclear power plants.

As the elected representative of the residents of Westchester County, I have registered our strong dissatisfaction with the current operation of the Indian Point nuclear power plant and our grave concern that the NRC has been either unwilling, or unable, to require Entergy, the owner of the plant, to comply with reasonable public safety requirements. As long as NRC's decision-making process excludes critical operational and safety concerns from consideration, we cannot assure the safety and security of Westchester residents. We hope that the NRC will not just rubber-stamp license renewals but subject them to a through and complete review.

NRC should not re-license an existing plant simply because it is there. We do not believe the same plant which is not designed nor built to current standards would be licensed today. As we show in our detailed comments, the programs presently in place to inspect aging nuclear power plants are inadequate, and recent industry experience with efforts to upgrade and/or retrofit older plants with current technology is poor. We cannot continue to ignore the grave danger posed by inadequate planning for disposal of spent nuclear fuel (SNF). Long-term storage of SNF at Indian Point is unacceptable in view of the hazards posed to our community, to New York City, and to the entire Hudson River Valley.

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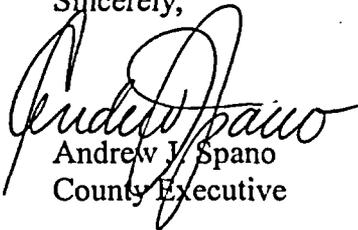
Mr. Kuo  
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The NRC must broaden the issues it considers in its license extension decisions in order to assure that unsafe plants are not permitted to operate and to give greater consideration to the safety needs of the local communities than presently is provided. We firmly believe that the only way the NRC can meet its obligation to the public is to ensure that all issues that impact public safety are considered when deciding whether to extend the license of an existing nuclear power plant. In particular, we insist that the NRC consider the appropriateness of existing sites, not just take such sites as givens. Furthermore, we insist that the NRC consider the current difficulties and realities when an emergency evacuation takes place in a dense, congested population center with limited roadways, even though the area was not as developed when the facility was first constructed. These are vitally important issues to be discussed at the May 10 meeting.

The technical support for our views is set forth in the accompanying memorandum that was prepared by our consultants, Levitan & Associates, Inc. and WPI.

On behalf of all the Westchester residents, we appreciate your consideration of these comments. We look forward to our meeting with you and your colleagues on May 10.

Sincerely,



Andrew J. Spano  
County Executive

AJS/ST/fa

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March 29, 2005

County Executive Andrew J. Spano  
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Re: Comments for the County of Westchester Regarding License Renewal Guidance

Dear County Executive Spano,

The County of Westchester has requested that Levitan & Associates, Inc. (LAI) and WPI review and prepare comments regarding the U.S. Nuclear Regulatory Commission's (NRC's) proposal to approve certain changes to the documents that guide their license renewal decisions. As you know, our two firms have been evaluating the retirement options for Indian Point on behalf of the County, and have also addressed the associated issues of replacement generation, decommissioning / spent nuclear fuel (SNF), and local economic / rate impacts. In this letter we are pleased to provide comments and recommendations for the following nuclear plant license renewal topics for the County to submit to the NRC:

1. Current age-related power inspection programs are inadequate.
2. Recent industry experience with major uprates and back-fits is poor.
3. Safety issues of on-site spent nuclear fuel storage are ignored.
4. All site-specific issues are important and should be considered.

Each of our comments and recommendations is discussed more fully below.

**1. Current age-related power inspection programs are inadequate.**

In 1982, the NRC established a program for nuclear plant aging research. Based on the results of that research, a technical review group concluded that many aging effects are manageable and do not pose technical concerns that would prevent life extension for nuclear power plants. In 1991, the NRC published safety requirements for license renewal as 10 CFR Part 54. This document defines age-related degradation unique to license renewal. As a result of a demonstration program of pilot plants, it was the NRC's opinion that the majority of aging effects were dealt

with adequately during the initial license period. In 1995, the NRC amended 10 CFR Part 54 to focus on managing the adverse effects of aging. The revisions were intended to assure that systems, structures, and components (SSCs) would continue to perform their intended function during the 20-year period of extended operation.

In a presentation made to the NRC on March 3, 2005, the Union of Concerned Scientists (UCS) concluded that the aging management programs currently in place are inadequate. The reasoning was based on the number of age-related failures experienced by the industry over the past several years. The intent of these programs is to identify the safety critical SSCs that are nearing the end of their operating life prior to failure. In some cases, the utilities are monitoring the effects of aging in the proper safety critical locations. However, several examples have shown that the utilities are performing inadequate examinations and are not identifying SSCs near failure. In other cases, they are monitoring the improper or wrong locations but using the correct examination methods. The aging management programs should apply statistical (*e.g.* probabilistic risk assessment methods) to determine the items at high risk, and then include multiple examination methods to avoid evaluating the right places with the incorrect examination methods. In addition, they should include some out-of-scope sampling methods to minimize looking in the wrong places and assuring that boundaries are correctly established. The UCS data produces a three phase “bathtub” curve with (1) an initial break-in phase when SSC failure rates improve, (2) an intermediate phase where problems are manageable and failure rates stay low, and (3) a final phase of wear-out and worsening failures. The aging management programs, when truly effective, should identify and focus on the components that are transitioning into the final wear-out phase prior to failure and compromising public safety.

The NRC’s accident sequence precursor occurrence rate figures trend indicates a marked increase from 1999 to 2001. This is the final phase of the bathtub curve (*i.e.* wear-out and failure). The majority of US nuclear power plants are currently progressing from the extended period of constant wear to a period of wear-out and ultimately to failure. This suggests that the aging management programs presently in place are inadequate and that a significant revision of the 10 CFR 54 rules is necessary.

**2. Recent industry experience with major uprates and back-fits is poor.**

It has been noted in the industry that several major pieces of plant equipment that are important to safety need to be repaired or replaced as plants reach their initial license termination date, a continuation of the “bathtub” curve phenomenon. This experience will accelerate for plants applying for license renewal. Current requirements for scoping, inspection and testing of components need to be reviewed to ensure the adequacy and implementation of those requirements. Plant power up-ratings, which reduce the margin of conservatism in the initial plant designs, are exacerbating this issue. Increasing power ratings may result in higher flow rates

through the reactors that may well increase internal vibrations / stress and wear components out quicker. Examples of major plant equipment failures include:

- a. Steam generator replacement.
- b. Extensive steam generator sleeving and tube plugging.
- c. Reactor vessel head repair/replacement.
- d. Reactor vessel weld leaks.
- e. Pressurizers have had heater failures, tube and weld repairs.
- f. Reactor coolant pump and impeller failures.
- g. Thermowell leaks.
- h. Moisture separator/steam dryer failures.
- i. Pressurized water reactors upflow modifications.
- j. Emergency diesel generator upgrades.
- k. Fuel pool re-racking due to degradation issues.
- l. Major crane and trolley upgrades that result in additional static and seismic loads on the supporting structures.

Several of these components have failed at plants without being detected. These failures highlight serious flaws in the initial reviews, design, testing, and inspection requirements that need to be reviewed prior to approving any changes to the license renewal process. These issues include active SSCs, even though current license renewal process only reviews passive SSCs.

Older plants, such as Indian Point, have been more prone to these types of significant operational problems. For example, a steam generator tube rupture at Indian Point Unit 2 in 2000 required the utility to replace all four steam generators, even though the Unit 3 steam generators were replaced several years before. Re-racking the spent fuel pools to allow more fuel to be stored at Indian Point may push the safety margins to extreme limits and will cause problems in the future.

**3. Safety issues of on-site spent nuclear fuel storage are ignored.**

SNF management is a huge issue for the nuclear power industry that is being ignored. Storage and disposal of SNF is outside the NRC license renewal process even though it has a profound effect on the public's long-term safety. Without a permanent SNF solution, the long-term safety of any nuclear plant cannot be maintained.

Communities around nuclear power plants are being exposed to an additional risk of on-site SNF storage, as the Yucca Mountain national nuclear waste repository site is still many years away from operation, despite more than two decades of work. In the meantime, SNF piles up at the nuclear power plants with no place to go. A recently held "firm" date for opening of Yucca Mountain in 2010 has been revised to 2012, and further schedule slippage is generally acknowledged to be likely. Even if Yucca Mountain does open, it will only have sufficient capacity for only about one-half of the country's SNF, and less if the NRC approves the upcoming license extension applications. A second (and necessary) repository can be assumed to have as long a licensing battle as Yucca Mountain has had, and will not be available in time to ameliorate this situation. Thus SNF may need to be stored on the Indian Point site for decades, and maybe longer.

The roots of this problem are deeply embedded in the original design of the nuclear power plants, dating back in some cases to the early 1960s. When the older plants were built, there was in essence a pact between the local public and the licensee / owner, with the Atomic Energy Commission (now the NRC) and the Atomic Safety and Licensing Board in a regulatory approval capacity. The analysis and dialogue that made up the licensing record and on which the final licensing decisions were based were substantially broader than the SSCs that are considered in the NRC's license extension decisions. These communities never counted on long-term SNF storage and were never asked whether an Independent Spent Fuel Storage Installation (ISFSI) would be acceptable.

The effects of SNF on license extension include the following:

- a. Early nuclear plants (those designed in the 1970s) are more sensitive to SNF management issues than new plants. The principal reason is that the design capacity of the SNF storage pools was limited by the heat rejection capacity. Many plants do not have large, controlled exclusion areas suitable for ISFSIs for additional SNF storage.
- b. The presence of a nuclear power plant pervades a community – siren tests, potassium iodide pills, nuclear drills, a diminishing tax advantage, maintaining evacuation capability, are all part of having a nuclear power plant nearby. While an operating plant produces electricity and provides certain local benefits, once

the plant is shut down only the SNF remains, a liability. It affects development in the immediate area, provides little or no tax revenue, generates radiation that must be monitored, requires very limited and relatively low-paying employment, and is a potential hazard that requires community emergency services to be maintained.

Indian Point Unit 1 was shut down in the 1960s and still has a dedicated SNF pool with approximately 7 canisters of old, but still highly radioactive, SNF. Indian Point Units 2 & 3 have SNF in storage pools that have been modified several times to extend their capacity, and an ISFSI is now being constructed. We believe that if the licenses for Indian Point 2 & 3 are extended, another, much larger ISFSI will be required. We estimate that the total SNF for the Indian Point units, including the additional SNF that would be generated in the 20 years of license extension, will require storage for up to 110 SNF canisters in an ISFSI area of approximately 10 controlled acres. That is a huge amount of radioactive waste that was never contemplated when Indian Point was first constructed.

Given that SNF management is not recoverable from decommissioning funds, there will be a real economic risk that a plant owner may not have sufficient funds to maintain the ISFSI once the plant retires and ceases generating revenues. The longer Yucca Mountain is delayed, the longer plants will operate, and the more SNF they will produce, increasing the the risk to the local communities. We recommend that SNF management should be considered in the license extension process.

**4. All site-specific issues are important and should be considered.**

Building a nuclear power plant in the 1960s represented a commitment by the licensee to the local community. Essentially, it was a pact between the licensee and the community for a specific period of time. The public had little recourse once the plant was approved, and the licensee could plan to use the plant for forty years. The atmosphere during those early days, prior to the accident at Three Mile Island in 1979, was one of positive anticipation with the promise of inexpensive power without long-term consequences. The projects created employment opportunities and offered significant property taxes. That landscape has been forever altered. Three Mile Island-2, the Browns Ferry fire, the Chernobyl accident, and the events of September 11, 2001 have altered the playing field, and the public is justifiably concerned over the safety of nuclear power plants.

It is time for the NRC to assess the viability of plants requesting license extension on a broad scale, at least as broad as the original license hearings, that is site-specific and site-sensitive to an appropriate degree. The NRC license extension process appears to be based on the theory that if the plant was licensed originally at the site, it must be in the best interest of all to extend the license, barring any significant issues having to do with passive SSCs. An alternate theory, which is more reasonable from a safety and societal standpoint, would be that the license extension

process should examine all issues related to the site and original license, and then concentrate on any issues that are new to that plant since the original license hearing or deviate from the original licensing basis. As many plants come to the end of their initial license terms, it is time to review several points on a plant-specific basis:

- a. Could the same plant be licensed on the same site today?
- b. Could a new plant, designed and built to the current standards, be licensed on the same site today?
- c. Have the local societal and infrastructure factors, which influenced the licensing of the plant originally, changed in a manner that would make the plant less apt to be licensed today?
- d. Have other local conditions, such as environmental regulations or population distribution, which affect the plants' continued operation changed?

These questions should be considered in license extension decisions, along with safety, security, and the condition of passive and active SSCs. Many nuclear power plants have been sold in recent years to companies that have made a commitment to the technology and have developed a wide base of operations. These companies are among the best operators in the country, and should be able to withstand the additional scrutiny and considerations that we are proposing. License extension for nuclear plants was never a guarantee for the original licensees or for the purchasers. The NRC should broaden the issues it considers in its license extension decisions to assure the safe operation of the plants and the SNF on-site, and balance the public's need for electrical diversity with the safety needs of the local communities.

We look forward to working with you and the rest of your staff on this important matter. Please feel free to contact me at 617.531.281 or at [sgp@levitan.com](mailto:sgp@levitan.com) or my colleague Jon Stouky of WPI at 804.938.1261 or at [jstouky@aol.com](mailto:jstouky@aol.com) if you have any questions.

Sincerely,



Seth G. Parker  
Vice President & Principal